

REMARKS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1 and 8-17 are currently pending, with Claims 11-12 withdrawn from consideration. New Claim 17 has been added by the present amendment. No new matter has been added.

Office Action Summary

Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,005,371 to Yonezawa et al. (hereinafter “Yonezawa”); Claims 1, 8-10, and 13-16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yonezawa in view of U.S. Patent No. 4,995,235 to Halene (hereinafter “Halene”); Claims 8-10 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yonezawa in view of U.S. Patent No. 4,703,886 to Kirby (hereinafter “Kirby”) and Claims 13 and 14 were rejected under 35 U.S.C. § 103(a) as unpatentable over Yonezawa in view of U.S. Patent No. 4,786,301 to Rhodes (hereinafter “Rhodes”).

Rejection of Claim 1 under 35 U.S.C. § 102(b)

Applicants respectfully traverse the rejection of Claim 1 under 35 U.S.C. § 102(b), because Yonezawa fails to teach or suggest all features recited in Claim 1.

Briefly summarizing, Claim 1 recites

an air conditioning apparatus, comprising:
a cold and hot water circuit for the flow of cold and hot water, the cold and hot water circuit including
four heat exchangers for effecting heat exchange between the cold and hot water and an airstream, wherein two of the four heat exchangers are made up of air heat exchangers which mainly perform air sensible heat processing and the other two heat exchangers are made up of adsorption heat

exchangers which mainly perform air latent heat processing with an adsorbent supported on a surface thereof,

a first switching mechanism for switching a direction of cold and hot water flow so that hot water flows through one of the adsorption heat exchangers while cold water flows through the other adsorption heat exchanger, and

a second switching mechanism for switching the direction of cold and hot water flow so that hot water flows through one of the air heat exchangers while cold water flows through the other air heat exchanger.

Claim 1 has not been amended, and as emphasized above, recites four heat exchangers... effecting heat exchange between cold and hot water and ***an airstream***. Two of the four heat exchangers are ***adsorption heat exchangers*** which mainly perform air latent heat processing and have an **adsorbent supported on a surface**.

The Office Action asserts that elements 22, 23, and elements “a” and “b” (as parts of element “A”) illustrated in Figs. 3-7 of Yonezawa correspond to the claimed four heat exchangers. Further, the Office Action asserts that of those cited elements, “a” and “b” correspond to the two adsorption heat exchangers. Applicants respectfully disagree, and submit that this interpretation of Yonezawa is incorrect, as explained next.

“Cooling section a” and “evaporation section b” described by Yonezawa are not adsorption heat exchangers which mainly perform **air latent heat processing** and further **do not affect heat exchange with an airstream**, because section a and section b are **not in contact with air**. Yonezawa states in column 5, lines 11-41:

Referring to FIGS. 1a and 1b, the apparatus is formed of a laterally elongated **cylindrical vessel 1 which is internally maintained in vacuum and sealed with a refrigerant**. The upper part of the vessel 1 forms an **adsorbent heating or cooling section a** wherein a plurality of heat transfer tubes 3 having a plurality of fins 2 arranged axially in parallel and orthogonally to the tubes are vertically disposed in rows at given intervals to constitute heat transfer surfaces, and an **adsorbent material 4** is packed and held between respective files of fins. Each file of the fins 2 intervening the adsorbent material 4 therebetween is covered

with a net to support and retain the adsorbent (as shown by broken lines).

On the other hand, the **lower part of the vacuum vessel 1 constitutes a refrigerant condensing or evaporating section b which comprises refrigerant holding surfaces 5** in the form of axially elongated dishes and a plurality of heat transfer tubes 6 placed in the dishes, which tubes may have fins or may not.

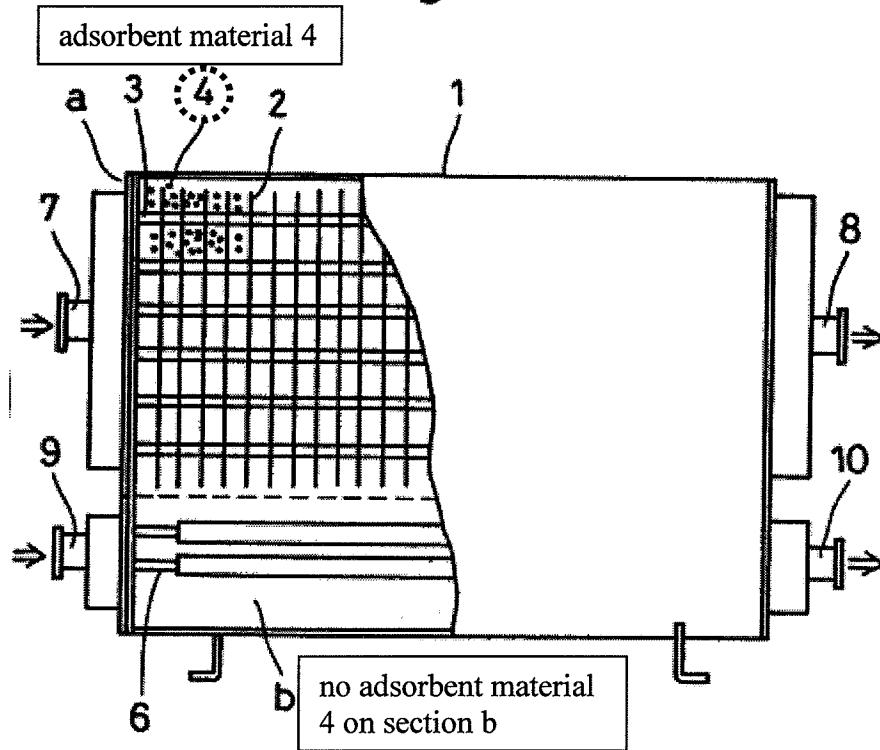
The adsorbent heating or cooling **section a and the refrigerant condensing or evaporating section b are located in communication with each other thereby to allow the refrigerant to flow through both sections a and b.** Both sections a and b may be formed within the vessel 1 without any separation or partition means (FIGS. 1a and 1b) or may be separated by a separator or partition wall S (FIGS. 1c, 1d). In the latter case, both sections a and b are adapted to communicate with each other through a pipeline equipped with an on-off valve V_A for routing therethrough the refrigerant vapor (FIG. 1d) located externally of the vessel 1.

Thus, Yonezawa describes that section a and section b are contained within a **vacuum sealed cylindrical vessel 1**, and therefore cannot be in contact with air. Indeed, Yonezawa further describes the function of cylindrical vessel 1 as an “adsorption thermal storage apparatus” which stores thermal energy by heating and drying adsorbent material on section a within cylindrical vessel 1, and then uses the stored energy by evaporating refrigerant from section b.¹ Further, as quoted above, cylindrical vessel 1 is **sealed with a refrigerant**, thus at best section a and section b are in contact with a refrigerant, but not with air. Because section a and section b are not in contact with air, they **do not effect heat exchange with an airstream.** Therefore, Yonezawa fails to teach or suggest four heat exchangers ... effecting heat exchange between cold and hot water and **an airstream**, two of the four heat exchangers being **adsorption heat exchangers** which mainly perform **air latent heat processing.**

¹ Yonezawa, column 2, lines 30-39.

Furthermore, Yonezawa fails to teach or suggest **two** adsorption heat exchangers. As noted above, the Office Action asserts that section a and section b each correspond to an adsorption heat exchanger. However, section b is **not covered or in contact with an adsorbent material**, as illustrated in Figs. 1 (a-d) and 2b of Yonezawa. Fig. 1b is reproduced below as an illustrative example, but all of Figs. 1 (a-d) and 2b show that **section b does not contain any adsorbent material 4**.

Fig. 1b



Therefore, section b is not an adsorption heat exchanger with an *adsorbent supported on a surface*. Consequently, Yonezawa fails to teach or suggest **two adsorption heat exchangers**, as recited in Claim 1.

Accordingly, Applicants respectfully submit that Claim 1 (and all associated dependent claims) patentably defines over Yonezawa, and request that the rejection of Claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Rejection of Claims 1, 8-10, and 13-16 under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of Claims 1, 8-10, and 13-16 under 35 U.S.C. § 103(a).

Applicants note that the Office Action has failed to properly address Claim 1 under a 35 U.S.C. § 103(a) rejection. The Office Action states on page 4 "...alternately regarding claim 1,... the Examiner respectfully suggests that **these features are not explicitly claimed**, and, further, that if they were, they **would be readily apparent** as present from the rejection below concerning Claims 15 and 16." Applicants respectfully submit that "being readily apparent" is not the standard for a rejection under 35 U.S.C. § 103(a). Further, as the features discussed by the Office Action are not actually recited in Claim 1, it is moot to further address the unclaimed features with regard to Claim 1.

Further, Applicants respectfully note that MPEP 706.02(j) clearly set forth the requisite contents of a rejection under 35 U.S.C. § 103(a) as:

After indicating that the rejection is under 35 U.S.C. 103, the Examiner should set forth in the Office action:

- (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate,
- (B) the difference or differences in the claim over the applied reference(s),
- (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and
- (D) an explanation as to why the claimed invention would have been obvious to one ordinary skill in the art at the time the invention was made.

None of these elements are set forth in the Office Action with regard to the rejection of Claim 1 under 35 U.S.C. § 103(a).

Furthermore, 35 U.S.C. § 132(a) requires that “[w]henever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Director shall notify the Applicants thereof, **stating the reasons for such rejection**, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of the application.” As noted above, the Office Action fails to state the reason for rejecting Claim 1 under 35 U.S.C. § 103(a).

Finally, Applicants respectfully submit that the secondary references (Halene, Kirby, and Rhodes) applied against the dependent claims fail to cure the deficiencies of Yonezawa. Therefore, Claim 1 patentably defines over the applied references, and Claims 8-10, and 13-16 are allowable at least by virtue of dependence from Claim 1. Accordingly, Applicants respectfully request that the rejection of Claims 1, 8-10 and 13-16 under 35 U.S.C. § 103(a) be withdrawn.

New Claim 17

New Claim 17 has been added to vary the scope of patent protection. Claim 17 reads on the elected species. Claim 17 recites, *inter alia*, a first adsorption heat exchanger and a second adsorption heat exchanger. As discussed above, Yonezawa lacks two adsorption heat exchangers. Therefore, Claim 17 is believed to be allowable over the applied references.

Conclusion

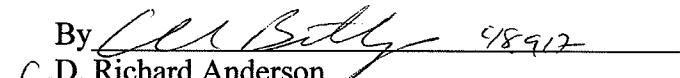
In view of the above amendment and the foregoing remarks, Applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact George S. Dolina, Reg. No. 63,654, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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